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New information on distribution of a marine leech, *Pontobdella muricata* (Linnaeus, 1758), from the Mediterranean coast of Turkey

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Abstract: New information on distribution of marine leech, *Pontobdella muricata* (Linnaeus, 1758) is given here. One leech was observed on the dorsal surface of Thornback Ray, *Raja clavata* (Linnaeus, 1758) that was caught in 2013 in the Antalya, Turkey. This is a new record for the eastern Mediterranean coast of Turkey.

Key words: marine leech, *Pontobdella muricata*, Thornback Ray, *Raja clavata*

Marine leeches are included in the class Hirudinea, which is divided into four orders, Acanthobdellida, Rhynchobdellida, Gnathobdellida, and Pharyngobdellida (Govedich et al. 2004). Members of these orders infest elasmobranch fishes. The subfamily Pontobdellinae (order Rhynchobdellida) is characterized by having metameric line (annulus) (Llwellyn 1966), which is a distinctive feature for classification of the genera (Klemm 1982). *Stibarobdella*, *Pontobdella*, and *Pentabdella* contain species that have trimeric, tetrameric, and pentameric somites, respectively (Llwellyn 1966). *Pontobdella* is characterized by the tubercles which occur on the major (a_2) annulus of each somite and usually on most annuli of the testicular and caecal regions and by the body circular or slightly flattened in cross sections (Govedich et al. 2004).

Leeches damage the bodies of their hosts. *Pontobdella muricata* (Linnaeus, 1758) causes local hemorrhages, swelling, tissue necrosis, and disappearance on the surface of epidermal tissue on its attachment regions on the host (Sağlam et al. 2003; Bakopoulos and Ksida 2013).

A Thornback Ray, *Raja clavata* (Linnaeus, 1758) was caught in November 2013 by fishermen as a non-target species from Antalya Bay located in the Mediterranean coast of Turkey. The ray was captured at a depth of 70 m between 36°46′ N, 031°12′ E and 36°46′ N, 031°08′ E (Figure 1). A leech (Figure 2) was collected on the dorsal surface of the Thornback Ray and then fixed in 70% ethanol without relaxation in the field. The fixed leech was examined in a Petri dish using forceps and parasitological needles under a stereomicroscope. The length, width and also diameters of oral and caudal suckers of the leech were measured, annulation on body surface of parasite was separated as a1, a2, b5, and b6 annuli, the somites on these annuli were examined in terms of the morphological characteristics and then these were counted for dorsal, lateral and ventral regions. After counting, the parasite was preserved in 70% ethanol for long-term storage. Identification of the leech was performed according to Sawyer (1986) and Llwellyn (1966).

Pontobdella muricata presented a dark green colour when was fresh, but the colour changed to pale yellow after fixation processes. The leech had oral and caudal suckers and there was a marginal fringe on the oral sucker and did not present true eyes. The length and width of the parasite were 99 and 28 mm, respectively. The diameters of the oral and caudal suckers were 2 and 5 mm, respectively. The anterior sucker was wider than trachelosome. Complete urosomal somites had four annulate as a1, a2, b5 and b6. Urosomal tubercle numbers were 12 tubercles on a_1, 8 tubercles on a_2, 10 tubercles on b_5 and 14 small tubercles on b_6. Annulation of the leech was as follow; uniannulate somites: none; biannulate somites: XI, XII, XXV, XXVI, XXVII; triannulate somites: VII–X; quadriannulate somites: XII–XXIV. The characteristics of the leech are in agreement with previous descriptions of *Pontobdella muricata* reported by Sawyer (1986) and Llwellyn (1966).

Pontobdella muricata was reported on the elasmobranches such as ray fish, *Raja* spp., marbled electric ray, *Torpedo* spp., common stingray, *Dasyatis pastinaca*, blacktip reef shark *Carcharhinus melanopterus*, and teleost fish species such as flounder, *Pleuronectes* spp. and horse mackerel, *Trachurus trachurus capensis* from many countries including Pakistan, Namibia, USA, Greece, Europe, Norway, Iceland, and Greenland (Piasecki 1982;

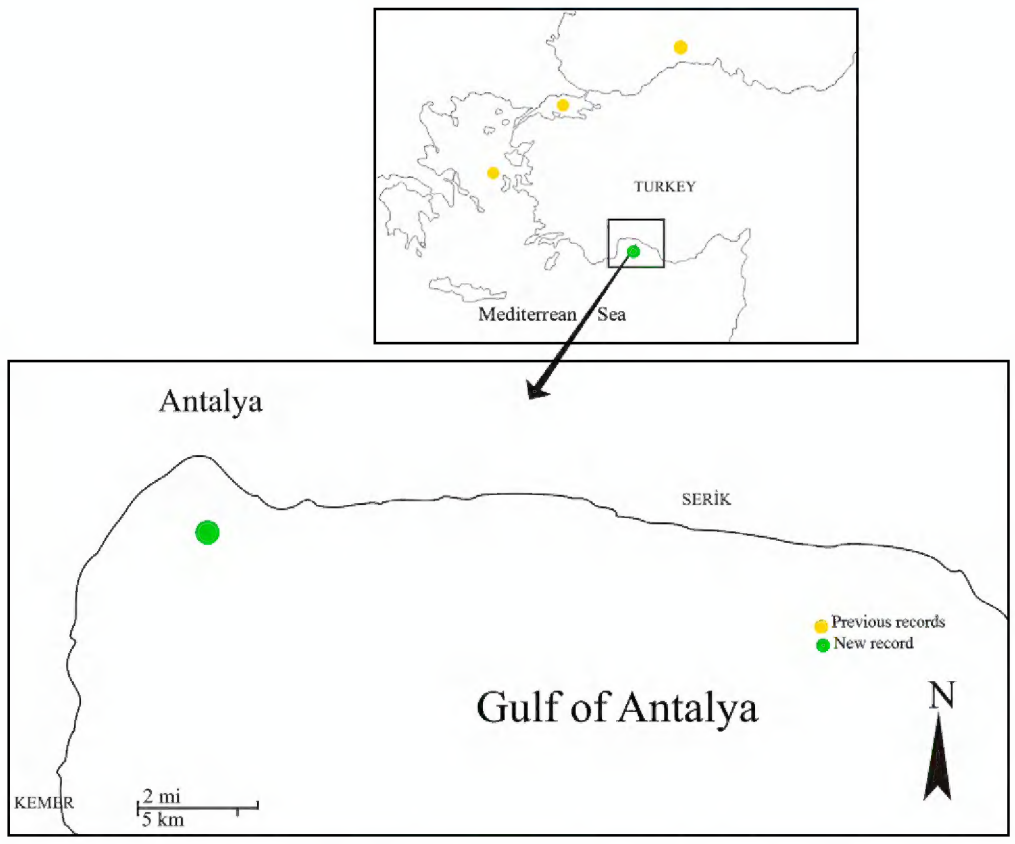

Figure 1. The map showing the previously records (yellow dots) and new record (green dot) for the species *Pontobdella muricata* in Turkey.

Figure 2. *Pontobdella muricata* on dorsal region of *Raja clavata*.

Sawyer 1986; Kazmi and Naushaba 2013; Bakopoulos and Ksidia 2013). In Turkey, *P. muricata* was collected from the elasmobranchs including *Torpedo marmorata* and *Raja clavata* from the Aegean Sea, *Raja* sp. from the Marmara Sea, and *R. clavata* from the Black Sea (Ergüven and Candan 1992; Sağlam *et al.* 2003; Öktener and Utevsky 2010).

Pontobdella muricata was previously recorded from the Black, Marmara, Aegean and western Mediterranean coastal waters of Turkey from elasmobranch fishes. This species was not previously reported from the eastern Mediterranean of Turkey and the present study is the first record in this area.

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